1/2   020   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--COMPARATIVE CHARACTERISTICS OF OMSK HEMORRHAGIC FEVER VIRUS STRAINS
   ISOLATED FROM DIFFERENT OBJECTS OF A NATURAL FOCUS -U-
AUTHOR-(03)-KORNILOVA, E.A., GAGARINA, A.V., CHUMAKOV, M.P.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 232-236

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMORRHAGIC FEVER, VIRUS, TISSUE CULTURE, ANTIGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0740   STEP NO--UR/0402/70/000/002/0232/0236

CIRC ACCESSION NO--AP0108946
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0108946

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXISTENCE OF STRAIN AND
  ANTIGENIC DIFFERENCES AMONG STRAINS OF OMSK HEMORRHAGIC FEVER (OHF)
  VIRUS WAS DEMONSTRATED. THE COMMON BIOLOGICAL PROPERTY OF ALL THE
  STRAINS CONSISTED IN HIGH PATHOGENICITY FOR LABORATORY ANIMALS AND
  CAPACITY TO MULTIPLY IN THE MAJORITY OF TISSUE CULTURES. HOWEVER, THE
  STRAINS DIFFERED SLIGHTLY IN THEIR ANIMAL PATHOGENICITY AND TIME OF
  MAXIMUM VIRUS INCREASE IN THE CULTURAL FLUID OF CELL CULTURES. THE
  INHOMOGENEITY OF THE STRAINS WAS CLEARLY DEMONSTRABLE IN THE STUDIES OF
  HEMAGGLUTINATING PROPERTIES. BY MEANS OF ANTIGENIC ANALYSIS OF THE
  STRAINS GROUPS WERE FOUND IN WHICH THE EXTENT OF ANTIGENIC SIMILARITY
  WAS THE GREATEST.

UNCLASSIFIED

1/2   019
UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--FORMATION OF COMPLEXES OF SCANDIUM WITH THIOCYANATE IONS IN AQUEOUS
SOLUTIONS -U-
AUTHOR-(04)-SAS, T.M., GAGARINA, V.A., KOMISSAROVA, L.N., GULIA, V.G.
COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1255-60

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, SCANDIUM COMPOUND, THIOCYANATE,
POTENTIOMETRIC TITRATION, SPECTROPHOTOMETRY, IONIC BONDING

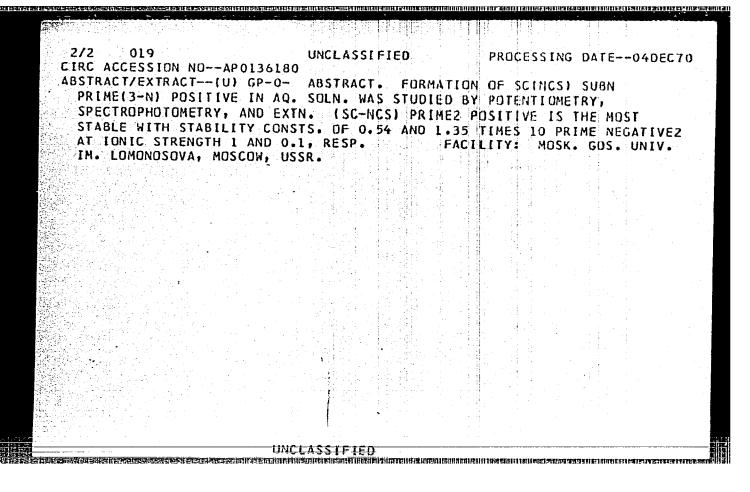CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0741   STEP NO--UR/0078/70/015/005/1255/1260

CIRC ACCESSION NO--AP0136180
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0136180
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMATION OF SC(NCS) SUBN
PRIME(3-N) POSITIVE IN AQ. SOLN. WAS STUDIED BY POTENTIOMETRY,
SPECTROPHOTOMETRY, AND EXTN. (SC-NCS) PRIME2 POSITIVE IS THE MOST
STABLE WITH STABILITY CONSTS. OF 0.54 AND 1.35 TIMES 10 PRIME NEGATIVE2
AT IONIC STRENGTH 1 AND 0.1, RESP.   FACILITY: MOSK. GOS. UNIV.
IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

GAGARINSKIY, YU,   Corresponding Member USSR Academy of Sciences and Director
Chemistry Institute

"The Ocean As Chemists See It"

Moscow, Pravda, 17 Mar 73, p 3

Abstract: Understandably, since they live on the shores of the Pacific,
scientists in the Far East are invariably seeking new ways of assimilating its
wealth. At the Vladivostock Chemistry Institute, these problems are tackled
by the Seawater-Chemistry section and also by the Mineral Raw Material Process-
ing Laboratory. These collectives' efforts are aimed mainly at investigating
the contents of the microconstituents of seawater, primarily in the waters of
the Sea of Japan, and the potential for extracting them on a rational basis as
well as at establishing scientific bases for the exploitation of rare metal
deposits.
     In the investigation of seawater as such, the primary task is to establish
what geochemical processes determine its chemical composition and to produce a
complete picture of the distribution of chemical elements in it (the suspen-
sions and colloids and the composition and nature of the ions in solution).
Despite the fact that all these questions have been under study for a long
1/4

- 3 -

USSR

GAGARINSKIY, YU, Pravda, 17 Mar 73, p 3

time. The material accumulated is clearly insufficient to facilitate a full understanding of the relationship between all the factors. We are striving to make good this deficiency to some degree. The personnel of the laboratory studying the chemistry of the microconstituents of seawater, for example, have discovered a phenomenon of great scientific interest -- the concentration of a number of elements (phosphorous, bromine, manganese, copper, and others) in sea foam.

Modern physical chemistry and chemical technology have well-developed methods (absorption, ion exchange, extraction, and others) and a number of means at their disposal for recovering elements from the weak solutions in which they exist. However, so much energy needs to be expended to obtain a worthwhile quantity of a substance by these methods, that it is of no advantage economically. It is more sensible, in our opinion, to use chemical sorbents to obtain the valuable microconstituents from the waste water of coastal power stations and industrial enterprises employing seawater as a cooling agent, as well as in the "filtering" dams of future tidal power stations.

We believe, however, that the cardinal solution lies in placing at the service of economics a process which occurs constantly in the ocean -- the selective absorption from the surrounding medium and accumulation of particular microelements by animals and plant organisms. It is well known, for example,

2/4

USSR

GAGARINSKIY, YU, Pravda, 17 Mar 73, p 3

that the concentration of vanadium in the blood of ascidia and of iodine in the tissues of sea kale is hundreds of thousands of times higher than in seawater. We must learn how to make use of living creatures in extracting valuable elements. It goes without saying that this is only permissible using such methods and on such a scale as will not disturb natural balances.

This gives rise to the second important task of our institute -- the search for and the compilation of a kind of "inventory" of the living concentrators in the sea and, in addition, the elaboration of technological bases for recovering substances from this "raw material." The microconstituents of greatest interest are those "collected by marine" organisms on the largest scale -- vanadium, managanese, cobalt, nickel, and copper. The amounts of these metals have already been studied in more than twenty types of seaweed. The next task is to formulate recommendations for their practical utilization.

In addition to the tasks of application enumerated above, a fundamental scientific problem of tremendous basic importance emerges: the study of the chemical forms in which the elements of interest to us are contained in living organisms and the discovery of the mechanism by which they are absorbed from seawater. It is known that the main role in the process of selective "extraction" of substances from solution is played by cellular membranes. Many scientific collectives in our country and abroad are currently working to discover

- 4 -

USSR

GAGARINSKIY, YU, Pravda, 17 Mar 73, p 3

the secrets of biological membranes. This work is being done at, among other places, the Institute of Marine Biology of the Far East Scientific Center.

The present level of research into the major aspects of the ocean's chemistry would be impossible without the extensive use of the tracer-atom technique. The prospects and the degree of profundity of scientific work in this sphere are largely dependent on the development of a radiochemistry center in the Far East. And, because of the shortage of research ships, we are also having great difficulties in organizing expeditions to collect material and perform experiments at sea. The effectiveness of research in the sphere of the chemistry of ocean water could be increased by the establishment of a chemico-technological marine experimental station, which needs to be constructed in Primorskiy Kary. These questions are awaiting resolution.

The elaboration of the problems with which the ocean confronts chemistry is beyond the capabilities of even a very good single collective. The chemistry institute therefore sees it as its mission not only to perform independent research but also to coordinate the scientific work being performed in this sphere in the Far East. The comprehensive assimilation of the ocean's resources requires the joint efforts of many of the country's scientific collectives.

4/4

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--FLUORINE 19 NMR IN CADMIUM AND MERCURY ANHYDROUS AND HYDRATED
    DIFLUORIDES -U-

AUTHOR--GAGARINSKIY, YU.V., POLISHCHUK, S.A., YAROSHEVSKAYA, N.F.,
    AVKHUTSKIY, L.M.

COUNTRY OF INFO--USSR

SOURCE--SPECTROS. LETT. 1970, 3(1), 23-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NMR SPECTRUM, MERCURY COMPOUND, CADMIUM COMPOUND, FLUORIDE,
    FLUORINE, ISOTOPE, MAGNETIC MOMENT, CRYSTAL HYDRATE, HYDROGEN BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1331   STEP NO--US/0000/70/003/001/0023/0026

CIRC ACCESSION NO--AP0107804

UNCLASSIFIED

CIRC ACCESSION NO--AP0107804
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE PRIME19 F NMR SPECTRA OF HGF
SUB2 AND HGF SUB2.2H SUB2 O WERE OBSD. AT 150DEGREESK AND COMPARED WITH
THOSE OBSD. BY A., ET AL. (1969) FOR CDF SUB2 AND CDF SUB2.2H SUB2 O.
THE CHEM. SHIFTS FOR HGF SUB2 AND HGF SUB2.2H SUB2 O WERE 536 PLUS OR
MINUS 8 AND 538 PLUS OR MINUS 8 PPM, RESP., AND THE 2ND MOMENTS WERE 5.3
PLUS OR MINUS 0.3 AND 17.1 PLUS OR MINUS 0.8 OE PRIME2, RESP. THE H
POSITIVE 2ND MOMENT FOR HGF SUB2.2H SUB2 O WAS 23.5 PLUS OR MINUS 0.8 OE
PRIME2, DEMONSTRATING THE EXISTENCE OF H BONDING, APPARENTLY OF THE OH,F
TYPE, IN THE CRYSTAL HYDRATES.

1/2   021   UNCLASSIFIED   PROCESSING DATE--11
TITLE--NEW NATURAL INTERMETALLIC TIN, ANTIMONY AND COPPER COMPOUNDS -U-

AUTHOR--NIKOLAYEVA, E.P., GRIGORENKO, V.A., GAGARKINA, S.D., TSYPKINA,
P.YE.
COUNTRY OF INFO--USSR

SOURCE--ZAP. VSES. MINERAL. OBSHCHEST. 1970, 99(1) 68-70

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOGRAPHIC LOCATION, CRYSTAL STRUCTURE, X RAY ANALYSIS,
ZIRCON, RUTILE, MINERAL DEPOSIT, TIN COMPOUND, ANTIMONY COMPOUND, COPPER
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1093   STEP NO--UR/0000/70/099/001/0068/0070

CIRC ACCESSION NO--AP0105953
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0105953
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNUSUAL MINERALS WERE FOUND DURING
STUDY OF HEAVY CONCS. IN TRIBUTARIES OF THE ELKIAIDAI BROOK (EASTERN END
OF THE NORTHERN NURA TAU RIDGE, UZBEKISTAN) IN THE AREA OF SILURIAN
ARENACEOUS ARGILLACEOUS FORMATIONS. THEY WERE LIGHT GRAY IRREGULAR
NODULAR, AND LAMINAL AGGREGATES WITH INCLUSIONS OF COUNTRY ROCKS.
ZIRCON, LEUCOXENE, RUTILE, APATITE, ANATASE, ANDALUSITE, BARITE,
CELESTITE, SCHEELITE, AND CINNABAR WERE FOUND TOGETHER WITH THESE NEW
MINERALS WHICH MADE 5PERCENT OF THE FRACTION. THE MICROSCOPIC STUDY
SHOWED THAT THE AGGREGATES ARE METALLIC SN IN CLOSE ASSOCN. WITH WELL
FORMED SMALL CUBIC CRYSTALS OF SOME OTHER MINERAL. THE MACRO AND
MICROSCOPIC STUDY, DISPERSION OF REFLECTANCE IN THE VISIBLE REGION,
MICROHARDNESS, X RAY STRUCTURAL DATA, AND DATA ON THE COMPN., OBTAINED
BY X RAY MICROANALYZER, SHOWED THAT THIS INTERMETALLIC COMPD. IS A NEW
MINERAL CALLED STISTAITE. THE STISTAITE WAS IN THE FORM OF SMALL
(0.02-0.15 MM) CUBIC CRYSTALS WITH METALLIC LUSTER. IT POSSESSED HIGH
REFLECTANCE (81.3PERCENT AT LAMBDA EQUALS 580 MMU) HAS CREAM WHITE, AV.
MICROHARDNESS 115 KG-MM PRIME2, AND PARAMETER A EQUALS 4.15 PLUS OR
MINUS 0.1 ANGSTROM OF ITS BCC. LATTICE. THE MINERAL CONTAINED
49.4PERCENT SN AND 5.06PERCENT SB. THE STISTAITE CRYSTALS HAD NUMEROUS
FINE BLUISH VIOLET INCLUSIONS WITH LOWER REFLECTANCE AND HIGHER HARDNESS
THAN STISTAITE. THE CUBIC CRYSTALS OF STISTAITE WERE NATURAL
INTERMETALLIC COMPDS. WITH SNSB FORMULA.

USSR

UDC 632.95

TRUKHLIK, S., DRABEK, I., KOVACH, I., and GAGER, S.

"Metathion -- New Low-Toxicity Organophosphorus Insecticide"

V sb. Khimiya i primeneniya fosfororgan. soyedin. (Chemistry and Application of Organophosphorus Compounds -- Collection of Works), Moscow, "Nauka," 1972, pp 477-483 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N440 by T. A. BELYAYEVA)

Translation: The article presents physical and chemical properties and methods of producing metathion (I), data on the hydrolysis of I in various media, and toxicity of the preparation for warm-blooded animals. Compound I consumption norms for various crops are indicated. Compound I can be used in fruit and vegetable growing and in viticulture to control the pests of ornamental plants and agricultural crops.

1/1

ACC NR: AP9012966   SOURCE CODE: UR/0247/69/019/001/0172/0173

AUTHOR: Gagoshidze, N. Sh.; Gugushvili, D. F.; Zhgenti, I. G.;
Khomasuridze, K. N.; Tsagareli, S. N.

ORG: Laboratory of Cybernetic Problems, Tbilisi State University
(Problemnaya laboratoriya kibernetiki Tbilisskogo gosudarstvennogo
universiteta)

TITLE: The effect of an alternating magnetic field of low-frequency
on the formation of electrodefense conditioned reflexes in white rats

SOURCE: Zhurnal vysshey nervnoy deyatel'nosti, v. 19, no. 1, 1969,
172-173

TOPIC TAGS: cybernetics, white rat, magnetic field, biologic effect,
electrodefense, conditioned reflex, biologic magnetic effect,
low frequency

ABSTRACT: In this article, the authors described experimentation in-
volving the exposure of white rats to light as a conditioning stimulus
and to a 30-volt current passing through the metal floor of their cage
as a nonconditioning stimulus. During this treatment the rats were also
exposed to an alternating, low-frequency magnetic field (6.8 kHz and
3.75 oersted). The rats were said to display either an avoidance response
(if they jumped to an insulated area after the light was switched on but
before the current was switched on) or a release response (if they

UDC: 612.833.81+612.014.426

Card   1/2

ACC NR: AP9012966

jumped to the insulated area only after the current was switched
on). It was concluded from the data recorded that exposure to the
magnetic field accelerates the development of the avoidance reflex
in white rats. Orig. art. has: 1 table.   [WA-22] [DW]

SUB CODE: 06/ SUBM DATE: 08Feb68/ ORIG REF: 007

Card   2/2

Biophysics

USSR

BUSHUYEV, V. N., VUL'FIUS, Ye. A., GAGLOYEV, V. N., GOLOVANOV, I. B., and
CHEREMISIN, A. N., Institute of Biological Physics, Academy of Sciences USSR,
Pushchino, Moskovskaya Oblast

"Physiologically Active Compounds. Correlation Between the Physiological Activ-
ity Data of Compounds and Their Molecular Spectroscopy. I. Nuclear Magnetic
Resonance Spectra and Physiological Activity of Some Cholinomimetic Compounds"

Abstract: The electron distribution (which was determined from NMR spectra) and
biological activity of the following cholinomimetic (CM) compounds was corre-
lated: acetylcholine chloride, acetylcholine bromide, acetylcholine iodide,
acetylthiocholine bromide, acetylthiocholine iodide, propionylcholine iodide,
propionylthiocholine iodide, butyrylcholine iodide, methacholine chloride,
carbaminoylcholine chloride, succincholine iodide, suberylcholine iodide, areco-
line bromide hydrate, and methylfurmethide iodide. The obtained results indi-
cated that all compounds of type $R - CO - O - CH_2 - CH_2 - N(CH_3)_3$ and suberyl-
choline iodide have practically identical shifts of the group $- CH_2 - CH_2 -$
$N(CH_3)_3$ and their electronic distribution should be identical. Difference in
1/2

USSR

BUSHUYEV, V. N., et al., Biofizika, Vol 18, Vyp 2, Mar/Apr 73, pp 216-222

their physiological activity are related to different interaction with cholino-
receptors. Models suggested by other authors regarding the muscarine and
nicotine cholinoreceptors are discussed.

2/2

1/2   024   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ON THE INVESTIGATION OF TWO NEW QUICK ACTING DEVELOPERS, PHENIDONE
   AND METHYLPHENIDONE, USED IN SPECTRUM ANALYSIS -U-
AUTHOR-(03)-DIMITROV, G., PETRAKIEV, A., GAGOV, V.

COUNTRY OF INFO--USSR

SOURCE--MASHINOSTROENE, 1970, VOL 19, NR 3, PP 126-128 -23

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS

TOPIC TAGS--SPECTRUM ANALYSIS, PHOTOGRAPHIC PROCESSING, ORGANIC AZO
   COMPOUND, PHOTOGRAPHIC CHEMICAL, HYDROQUINONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0495   STEP NO--BU/9002/70/019/003/0126/0128

CIRC ACCESSION NO--AP0121169
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0121169
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEVELOPING CAPACITIES OF TWO
   TYPES OF DEVELOPERS, BASED ON PHENIDONE OR METHYLPHENIDONE AND
   HYDROQUINONE, HAVE BEEN STUDIED. THE RATIO BETWEEN THE COMPONENTS HAS
   BEEN SELECTED IN SUCH A MANNER THAT THE DEVELOPERS ARE QUICK ACTING,
   COMPARED WITH THOSE THAT ARE BROADLY USED IN PHOTOGRAPHIC PRACTICE.
   WHEN USED FOR THE PURPOSES OF SPECTRUM ANALYSIS, THEY PROVIDE GREATER
   DENSITY OF THE BLACKENING OF THE SPECTRUM LINES.   FACILITY:
   FIZICHESKI FAKULTET NA SOFIYSKIYA UNIVERSITET.

UNCLASSIFIED

USSR   UDC 632.954:213.2   .

SPIRIDONOV, YU. YA., and GAGUA, G. V., Candidates of biological sciences, All-
Union Scientific Research Institute of Plant Pathology

"Means of Increasing the Effectiveness of Herbicides in Humid Subtropical
Conditions"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 9 (107), 1972, pp 44-47

Abstract: Experiments were conducted from 1966-1970 on corn crops of the
Adzhametskaya white variety in moderately loamy soil in the southern part of
the Kolkhid lowland of the Adzharskaya ASSR. In the first experiment the
herbicide was applied 2-5 days before sprouting; in the second one compound was
applied 2-3 days before sprouting and another 45 days later, in the 4/5 leaf
stage of growth, which corresponds to the time of appearance of miliary
annual weeds. The standard was simazine in a dosage of 10 kg/ha. All the
herbicides were applied in water suspension at a rate of 500 l./ha. The
weed mixture on the plots was typical for the region. In experiment 1 the
most effective mixtures against miliary weeds contained simazine and either
diuron or monuron. Mixtures of simazine with 2,4-D were less effective than
simazine alone, since monocotyledonous weeds, resistance to 2,4-D, predominate
1/2

USSR

SPIRIDONOV, YU. YA., and GAGUA, G. V., Khimiya v Sel'skom Khozyaystve, Vol 10, No 9 (107), 1972, pp 44-47

in the district. Grain harvests in several of the treated plots were four times those in the untreated control plots. The most effective mixtures were simazine, 2.5 kg./ha., and atrazine, 2.5kg/ha.; simazine, 5 kg/ha., and diuron, 2.5 kg/ha.; and simazine, 5. kg/ha., and monuron, 2.5 kg/ha. The authors had shown in an earlier article that symm-triazines in a 5 kg/ha dosage pratically speaking lose their effectiveness by the second month after treat-ment. Experiment 2 showed that the best results, reducing weed content 80-90%, were obtained by using diuron or monuron at 5 kg/ha., then later treating with 2.5-5 kg/ha. of atrazine or simazine. Use of atrazine of simiazine first in experiment 2 retarded growth and caused partial loss of turgor, consequently reducing yields. The most effective variations were followed by a significant increase in grain yield of simazine alone, and nearly quadruple yields in comparison with the untreated control.

2/2

USSR

DRITOV, L.A., ABRAMOV, A.N., GAGUL'KIN, A.I.

"Methods Of Control Of Frequency Converter Based On Transit Effect"

Translation: Some methods are considered for control of the frequency of micro-
wave oscillators in a regime of limited buildup of the space charge. 1. Frequen-
cy tuning by a change of the voltage applied to a crystal in which a p-n junction
is formed parallel to the surface of the base plate with planar contacts. Change
of the thickness of the barrier layer under the action of exterior voltage
changes the generating volume and consequently also the generation frequency. The
range of frequency tuning $\sim$ 10 percent. 2. Control of frequency with the aid of
a temperature gradient. With a temperature difference $\Delta T \approx 50^{\circ}$ C, conditions
are created in the specimen analogous to those existing in specimens with a vari-
able cross section. With an increase of ΔT the middle of the tuning band is
shifted to the side of the larger frequency. With simultaneous change of the
temperature and voltage, the frequency is changed by one and one-half octaves.
It is possible to improve the linearity of the characteristics of the device by

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USSR

DRITOV, L. A., et al., Tr. Ul'yanovsk. politekhn. in-ta (Works of Ul'yanov Polytechnical Institute), 1971, 6, No 3, pp 129-134 (from RZh--Elektronika i yeye primeneniye, No 12, Dec 1971, Abstract No 12B209)

a choice of the form of the specimen. 3. Frequency tuning with the aid of a ferromagnetic oscillator based on iron-yttrium ferrite with a garnet structure. Graphs are presented of the dependence of the frequency of the oscillations which are generated, on the magnetic field. 4 ill. 9 ref. V. S.

2/2

USSR

GAIBOV, T. D., ROMANOVA, P. M., and AYVAZYAN, L. A.

"Biological Toxicity of Diaminoethoxy-dimethyl Sulfide"

Uch. zap. Azerb. un-t. Ser. khim. n. (Scientific Notes of Azerbaydzhan University: Chemical Sciences Series), 1970, No 2, pp 69-70 (from Rkh-Biologicheskaya Khimiya, No 2, 25 Jan 71, Abstract No 2F2117 by M. Sh.)

Translation: β, β'-Diaminoethoxy-dimethyl sulfide injected subcutaneously into rabbits (0.2-1.0%) did not alter Hb concentration, erythrocyte count or indicators of erythrocyte sedimentation rate.

1/1

USSR

UDC 577.391

BURLAKOVA, YE. B., and GAINTSEVA, V. D., Institute of Chemical Physics, Academy of Sciences USSR

"Effects of Irradiation and of Free-Radical Inhibitors on Mice with Transplanted Leikosis La"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 5, Sep/Oct 71, pp 764-767

Abstract: To investigate the combined protective effect of irradiation and of a free-radical inhibitor called ionol (4-methyl-2,6-ditert-butylphenol) against leukosis, tests were performed on 1,713 mice into which 10^8 Leukosis La cells were transplanted and which received 20-130 mg of ionol per kilogram body weight 30 minutes prior to irradiation with 100-700 r (performed 24 hours after transplantation). The survival period of intact irradiated mice represented control data. Mice with leukosis survived for the longest period after treatment with 450 r. A stronger dose made radiation sickness more severe. Ionol magnified the protective effect of irradiation against leukosis and prolonged the mean survival time. The best effects were obtained by combining a large dose of ionol (100-130 mg/kg) with a small irradiation dose (up to 400 r) or a small dose of ionol (40-90 mg/kg) with a large irradiation dose (above 400 r). In these cases, ionol exerts both radioprotective and anticarcinogenic effects.
1/1

USSR

KIBYAKOV, A. V., KOMAROV, G. P., and GAK, YE. Z., Chair of Normal Physiology,
First Medical Institute, Leningrad

"On the Possible Role of Hydrodynamic Factors in Synaptic Transmission"

Abstract: One of the many aspects of the process of synaptic transmission of
excitation which has not yet been clarified is the question of what kind of
forces cause the mass approach of vesicles to the presynaptic membrane. In
this article the authors examine the possibility that these forces are the magneto-
hydrodynamic forces which are generated during the development of the action
potential in the following way: at the moment of transmission of the action
potential, large electrical currents are generated and lead directly to the
occurrence of high-intensity magnetic fields in the premembrane areas, the
voltage of which decreases very rapidly with distance. The interaction of the
electrical currents with these magnetic fields generates large magnetohydro-
dynamic forces, which are directed parallel to the axis of the axon, that is,
they will exert a significant impulse pressure on the axoplasm and the vesicles
contained in it, causing them to move toward the presynaptic membrane.
1/1

USSR   UDC 612.014.42:538.692

GAK, Ye. Z., KOMAROV, G. P., and ZHGENTI, T. G.

"Mechanism of the Biological Effect of Low-Frequency Magnetic Fields"

Kisinev, Elektronnaya Obrabotka Materialov, No 1, 1971, pp 63-66

Abstract: An examination of kinetic effects arising in electrolytes under an
alternating magnetic field showed that microscopic vibrations of the entire
mass of the liquid should occur with a frequency exceeding the frequency of
the magnetic field by a factor of 2. A previous study showed that vortex or
laminar motion of the entire mass of an electrolyte occurs in aqueous solutions
of electrolytes under the action of an external permanent electric or magnetic
field. This motion, which is similar to colllective diffusion, leads to a
change in the heterogeneous processes occurring in diffusion or mixed kinetics.
These phenomena are due to the energy of the electric field since any energy
effect of the magnetic field on such systems is practically absent. This
study considers the possibility of the rise of similar kinetic effects for
the nonstationary case of the effect of a low-frequency magnetic field on
electrolytes. The purpose of the study was to verify experimentally the
possibility of the effect of such fields on aqueous solutions of electro-
lytes and on biological objects and to develop a mechanism for the primary
1/2

USSR   UDC: 621.316.543(088.8)

GAK, I. I., KOZLOV, G. A.

"A Coaxial Switch"

USSR Author's Certificate No 277891, filed 7 Mar 69, published 19 Nov 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V418 P)

Translation: This coaxial switch consists of two input and two output
transmission lines connected to a commutating element with capacitive
coupling between the commutating conductors. As a distinguishing feature
of the patent, in order to ensure operation without sparking with high-
-power signals, the above-mentioned commutating element is made in the
form of a rectangular metal box with the four coaxial leads mounted in its
corners. The inner conductor of each lead contains a flat spring with
a plate on its end. The plates of the two leads located on one diagonal
of the box are covered with an insulating film on one side, and switching
is done by laying adjacent plates one on the other.

1/1

- 68 -

1/2   013   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--RADIATIVE CORRECTIONS TO THE PROCESS E PRIME POSITIVE PLUS E PRIME
   NEGATIVE YIELDS PI PRIMEO PLUS GAMMA -U-
AUTHOR--GAKH, G.I.

COUNTRY OF INFO--USSR

SOURCE--UKRAYIN. FIZ. ZH. (USSR), VOL. 15, NO. 5, P. 798-803 (MAY 1970)

DATE PUBLISHED----MAY70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON POSITRON PAIR, PARTICLE ANNIHILATION, APPROXIMATION
   METHOD, GAMMA RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1799   STEP NO--UR/0185/70/015/005/0798/0803

CIRC ACCESSION NO--AP0133704
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0133704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIATIVE CORRECTIONS TO THE PROCESS E PRIME POSITIVE PLUS E PRIME NEGATIVE YIELDS PI PLUS GAMMA ARE CALCULATED IN THE TWICE LOGARITHMIC APPROXIMATION WITH TAKING INTO ACCOUNT RADIATION OF SOFT PHOTONS.

UNCLASSIFIED

TITLE--DETERMINATION OF THE VAPOR PRESSURE OF RHO, METHOSYPHENOL,
   BUTOXYANISOLE, AND 2,5,DIBUTOXYANISOLE -U-

AUTHOR-(02)-GAKH, I.G., GAYDAY, N.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1), 212

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--VAPOR PRESSURE, METHOXY COMPOUND, ANISOLE, PHENOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0334   STEP NO--UR/0080/70/043/001/0212/0212

CIRC ACCESSION NO--AP0103989
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0103989

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VAPOR PRESSURE (RHO, TORR) WAS
DETD. BY A STATIC METHOD (E. KREL', 1960). THE RHO CAN BE EXPRESSED AS
A FUNCTION OF TEMP. T BY THE FOLLOWING: IN RHO EQUALS MINUS (DELTA H-RT)
PLUS ALPHA. THE VALUES OF DELTA H-R AND ALPHA ARE 6997.34, 19.94;
6547.50, 18.22, AND 7741.88, 20.125 FOR RHO, METHOXYPHENOL,
BUTOXYANISOLE, AND 2,5,DIBUTOXYANISOLE, RESP.

UNCLASSIFIED

USSR   UDC [537.226+537.311.33]:[537+535]

GAKH, S. G., BORODIN, V. Z., and KRAMAROV, O. P.

"Influence of High-Temperature Polarization on Pyroelectric Effect and
Electrical Properties of Barium Titanate"

Elektron. tekhnika. Nauch.-tekhn. sb. Materialy (Electronic Engineering:
Collection of Scientific and Technical Works on Materials), 1970, vyp. 8,
pp 92-96 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE611 from summary)

Translation: The authors studied the possibilities of improving the stability
of the pyroelectric properties of $BaTiO_3$ single crystals by selecting the
appropriate polarization mode. Preliminary data are presented on the influ-
ence of high-temperature polarization on the magnitude and stability of the
pyroelectric effect in $BaTiO_3$ single crystals.

1/1

YEREMENKO, B. A., VALOVOY, B. N., YARMILKO, V. G., TAVARTKILADZE, YA. N., GAKHARIYA, K. T.

"Control Algorithms for the Diffusion Process of Sugar Beet Production"

V sb. Prom. kibernetika, (Industrial Cybernetics -- collection of works), Kiev, 1971, pp 256-260 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V551)

No Abstract

1/1

– 55 –

USSR

GALANENKO, V. B., KARNOVSKIY, M. I., KRASNYY, L. G., Kiev Polytechnical Institute

"Measurement of Correlation Functions of Nonstationary Acoustic Fields"

Abstract: A method is considered for measuring the correlation functions $K(t,x;\tau,\rho)$ of nonstationary acoustic fields which appreciably reduces the measurement error by averaging the field $\phi(t,x)$ with respect to spatial coordinates. A sufficient condition is derived for the ergodicity of the field $\phi(t,x)$ in accordance with the spatial coordinates with respect to the correlation function. Expressions are found for the statistical error of measurement of $K(t,x;\tau,\rho)$, and the results of computations are given on variance of the estimate of the correlation function for different models of random fields.

1/1

1/2   009   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--ISOMERIZATICN OF TRIMETHYLGLUCOSE TO
   TRIMETHYL,GLUCO,CRTHC,SACCHARINIC ACID -U-
AUTHOR-(03)-GAKHCKIDZE, R.A., NAGAYDELI, A.I., DANILOV, S.N.

CCUNTRY CF INFC--USSR

SOURCE--SOOBSHCH. AKAD. NAUK. GRUZ. SSR 1970. 57(1), 73-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TCPIC TAGS--ISOMERIZATION, GLUCOSE, LEAD COMPOUND, SACCHARIDE, ORGANIC
   ACID

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3C02/1193   STEP NO--UR/0251/70/057/001/0073/0076

CIRC ACCESSICN NO--AP0128611
                          UNCLASSIFIED

CIRC ACCESSICN NO--AP0123611
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CCNVERSION WAS CARRIED OUT OF
3,5,6,TRI,CMICRGN,METHYL,D,GLUCOSE INTO THE NEW COMPD.
"3,5,6,TRI,METHYLGLUCOORTHOSACCHARINIC ACID," BY HEATING IN THE
PRESCENCE OF PB(OH)SUB2. THE SPECIFIC RCLE OF PB(OH)SUB2 IN THE
ISOMERIZATICN WAS INVESTIGATED.

UNCLASSIFIED

USSR

GAKHRAMANOV, K. I., SAFAROV, G. G.

"Stability of a Viscoplastic Section in Plates Under Biaxial Stretching"

V sb. Mekh. deformir. tverdykh tel (Mechanics of the Deformation of Solids --
Collection of Works), Baku, "Elm", 1970, pp 79-85 (from RZh-Mekhanika, No 9,
Sep 71, Abstract No 9V384)

Translation: A plate of viscoplastic material, the stresses and deformation
rates of which are related by the expression

$$\sigma_{ij} = \sigma \delta_{ij} + 2\left[\frac{k}{I} + \eta\right] \dot{e}_{ij}$$

$(\sigma = \sigma_{ij}/3, I = \sqrt{2/3}\sqrt{\dot{e}_{ij}\dot{e}_{ij}};$ k is the yield point, η is the viscosity coefficient), is
subjected to uniform biaxial stretching according to the law $\sigma_{yy} = m\sigma_{xx}$. A
simple load is thus ensured up to the time of perturbation of the basic state.

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GAKHRAMANOV, K. I., SAFAROV, G. G., Mekh. deformir. tverdykh tel, Baku, "Elm", 1970, pp 79-85

The equilibrium equation for the variation in stresses $\delta\sigma_{ij}$ and the relationship between $\delta\sigma_{ij}$ and $\delta\varepsilon_{ij}$ and also the boundary conditions to which the incompressibility condition is connected are described. A solution of the equilibrium equations is sought that satisfies certain symmetry conditions which occur in the case of the formation of a neck in the middle section of the plate. A solution is obtained for the case $m = 1(\sigma_{xx} = \sigma_{yy})$. It is shown that the critical force under which a stability loss arises in the form of a neck is a function of time. V. I. Van'ko.

2/2

USSR   UDC 669.017:548.526

GAL', V. V., GRUZIN, P. L., and YUDINA, G. K., Central Scientific Research
Institute of New Metallurgical Technology imeni I. P. Bardin

"Study of Surface Diffusion of Metals by Autoradiography"

Abstract: The regularities of surface diffusion were studied for sources used
in the study of migration by autoradiography. Formulas are presented for the
processing for data produced by contact autoradiography is checked on the basis
of results of an earlier work. Processing of the results of the work (by
Winegard and Chalmers) produced the temperature dependence of the surface self-
diffusion factor of silver as 19.9 Kcal/mol, satisfactorily agreeing with the
figure of 12 Kcal/mol produced by Suzuoka.

1/1

USSR   UDC 669.293

GAL', V. V., NIKITIN, K. A., PAVLOV, Yu. A., SAVINOV, V. K., and SKACHKOVA, T. M.
Moscow Institute of Steel and Alloys, Institute of High Temperatures of the
Academy of Sciences USSR

"Study of the Process of Producing Niobium Carbide By Through Diffusion Satura-
tion of Graphite"

Abstract: The process of producing niobium and carbide by through
diffusion saturation of graphite was analyzed, proceeding from
the derived expression for the time τ required to realize a
through saturation of the grain $\tau = R^2/6\beta \cdot D$, where R=initial
radius of the grain, D=coefficient of reactive diffusion, and
$\beta = \Delta C_1/\Delta C_2$, and ΔC_1=homogeneity range of the growing phase
and ΔC_2=difference of solubilities in the growing phase and the
saturable grain. The duration of saturation of a graphite gra-
nule was found to be less than the through saturation time of

1/2

USSR

GAL', V. V., et al., Tsvetnaya Metallurgiya, No 2, 1973, pp 117-120

a metal granule of the same size. Experimental results of niobium carbide production by diffusion saturation of graphite granules in a pseudo-liquefied layer by their interaction with $NbCl_5$ are reported. The temperature dependence T (duration of the experiment 1 hr) of the magnitude of the reaction surface S, referred to a single granule, is discussed by reference to the S/T diagram. The through diffusion saturation of graphite granules (0.6-0.8 mm), when using PG-50 porous graphite and niobium pentachloride, can be realized at temperatures > 2400° and ∿10 hrs aging. Two figures, one table, two formulas, five bibliographic references.

2/2

USSR

UDC 546.882'26

GAL', V. V., and NIKITIN, V. A., Institute of High Temperatures of the Academy of Sciences USSR

"Investigation of the Formation Process of Niobium Carbide by Diffusion Metallization of Graphite in a Pseudo-Liquefied Layer"

Abstract: The formation of niobium carbide by diffusion metallization of graphite in a pseudo-liquefied layer was investigated by analyzing the kinetics of the carbide layer growth on compact graphite particles in the temperature interval of 1500—3000 °C and the time range of 5 min — 3 hrs. The investigation results are discussed by reference to diagrams showing the phase distribution of C, the thickness of the NbC-layer depending on the settling time, the thickness of the carbide layer in relation to the settling temperature of Nb during 1 hr, and the settling rate of Nb depending on the temperature by forming

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USSR

GAL', V. V., and NIKITIN, V. A., Izvestiya Akademii Nauk SSSR, Neorganicheskiye
Materialy, Vol 7, No 7, Jul 71, pp 1172-1175

the layer in H and by decomposition of $NbCl_5$. The formation of
the NbC-layer by decomposition of $NbCl_5$ on graphite particles is
shown. The investigation demonstrates the possibility of niobium
carbide formation by diffusion metallization of graphite by de-
composition of $NbCl_5$ for the saturation temperature over 2400 °C.
Six illustr., two biblio. refs.

2/2

USSR   UDC 621.79

GAL', V. V., and GRUZIN, P. L. Moscow

"Study of the Propagation of Fusible Metals on the Surface of
Copper"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70,
pp 49-54

Abstract: The article describes results of a study of the propa-
gation of mercury (in the 5-80° temperature range) and gallium
(in the 35-80° range) on the surface of single-crystal and poly-
crystalline specimens of copper prepared from ingots obtained by
dip-forming. The propagation of mercury begins with a short ini-
tial stage, followed by a second longer stage. Propagation is ac-
companied by the formation of a single dull spot. The propagation
of gallium leads to the formation of five zones visually distin-
guished by different shades, which limit the resultant phases.
The number of visually observed layers corresponds to the number
of intermetallides in the Cu-Ga and Cu-Hg systems. The spot
size in the case of mercury is described by the time function $t^{0.5}$

1/2

- 94 -

USSR

at a temperature above 20° C. The initial propagation stage is
due to hydrodynamic flow, while the subsequent stage is due to
diffusion.. The growth of the spot in the case of gallium can
be described by a power time function with an index of 0.5+0.1
over the entire temperature range. The propagation rate of the
melt varies for different crystal planes. The anisotropy of the
diffusion propagation of mercury and gallium according to direc-
tion was studied on the (110), (100), (111) and (210) planes of
copper. A further study of the surface diffusion of melts on
single crystals of copper, nickel and their alloys is planned
in subsequent articles.

2/2

1/2   024   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--COMPLEX EQUIPMENT FOR LABORATORY TESTS OF PNEUMATIC AND SOLID TYRES
-U-
AUTHOR-(04)-PETKOV, B., VALCEV, K., GALABOY, J., YURUKOV, V.

COUNTRY OF INFO--BULGARIA, USSR

SOURCE--MASHINOSTROENE, 1970, VOL 19, NR 4, 156-158

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, METHODS AND EQUIPMENT

TOPIC TAGS--MOTOR VEHICLE TIRE, TEST METHOD, STATIC TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1743   STEP NO--BU/9002/70/019/004/0156/0158

CIRC ACCESSION NO--AP0123544
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0123544
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEX EQUIPMENT DESCRIBED
WHICH IS USED IN THE TESTING OF COMPACE AND PNEUMATIC TYRES PROVIDES FOR
CARRYING OUT COMPLETE INVESTIGATION OF AUTOMOBILE AND ELECTRIC TRUCK
TYRES BOTH UNDER LABORATORY AN FIELD CONDITIONS. THE RESULTS ARE GIVEN
OF STATIC AND DYNAMIC TESTS OF TYRES OF BULGARIAN AND SOVIET
MANUFACTURE.

UNCLASSIFIED

UDC 537.591.5

VERNOV, S. N., GORCHAKOV, YE. V., IGNAT'YEV, P. P., and GALACH'YEV, N. G.

"Variations in Fluxes of Charged Particles of Various Energies According to AIS Data"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 12, Dec 71, pp 2418-2422

Abstract: The article considers data on variations in the fluxes of charged particles of various energies, recorded on the Venus-2,3,4,6 and Zond-3 automatic interplanetary stations. The flight of Venus-2 and 3 and Zond-3 gave information for 1965; the Venus-4 flight, for 1967; and the Venus-6 flight, for 1969. Data on protons with $E = 1-5$ Mev and $E > 30$ Mev are mainly used. The data on low-energy protons were obtained by means of fine semiconductor detectors which recorded only protons and multiply charged particles but were insensitive to electrons. The protons with $E > 30$ Mev were measured by means of a gas-discharge counter. It is shown that for short (less than two days) and long (more than several days) variations there is an increase in low-energy proton flux during a decrease in the galactic cosmic-ray intensity. A

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USSR -

VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 12, Dec 71, pp 2418-2422

more careful study of the relation between these phenomena requires that galactic cosmic rays be recorded by a detector with a high energy threshold value, which, for all practical purposes, would not record solar protons against a background of galactic cosmic rays.

2/2

ON THE EFFECT OF SUBFRACTION OF CARCINOMATOUS RABBIT SERUM β-GLOBULIN ON THE GLYCOLYSIS AND RESPIRATION

N. P. Galagan, G. V. Stepanchenko, Y. I. Chernyavsky

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Summary

The effect of blood serum proteins of healthy rabbits and animals with the transplanted Brown-Pierces carcinoma on the processes of glycolysis and respiration as well as the effect of β-globulin subfraction on them which gives a positive sedimentation test for the Brown-Pierce carcinoma were studied.

It is shown that blood serum of carcinomatous rabbits, β-globulin and one of its subfractions, which is conditionally called "protein positively reacting in the sedimentation test for carcinoma" (PPR-STC) evoke a sharp activation of the process to lactic acid formation in the extracts of the rabbit skeletal muscles. With addition of healthy rabbit sera and their β-globulin to such extracts the intensity of lactate formation in comparison with the control considerably decreases.

1/2

REEL/FRAME
19790841

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AP0047321

The results of the investigation of the effect of sera of healthy and carcinomatous rabbits on the oxygen absorption by mitochondria of the rabbit myocardium showed that the addition of healthy rabbit sera activates this process by 32% in comparison with the control and cancer serum added inhibits it almost to the same degree. β-Globulin and PPR-STC produce a greater inhibition— by 59 and 75%, respectively.

A conclusion is drawn on the presence in the blood of the animals, affected with the Brown-Pierces carcinama, of substances capable of regulating energetic processes in tumours.

19790842

Physiology

UDC 612.17:612.273.2

USSR

GALAGUZA, YU. P., Institute of Endocrinology and Metabolism, Kiev

"Cardiovascular Response to Hypoxic Hypoxia"

Kiev, Fiziologichniy Zhurnal, No 6, 1971, pp 789-794

Abstract: The author studied the effect of hypoxia on the coronary and systemic circulations in dogs with intact thoracic and abdominal cavities, natural respiration and blood circulation. Hypoxia was induced by exposing the animals to 10% oxygen in nitrogen for 30 minutes. Hypoxia resulted in dilatation of the coronary vessels as did the injection of epinephrine into the coronary bloodstream. The dilatation caused by the catecholamine was diminished by hypoxia, which also gave rise to pressor-depressor and pressor reactions. These changes in the vascular response to epinephrine are regarded as marked disturbances of regulation of the coronary circulation in hypoxia.

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USSR   UDC 539.171.12

BENGALI, N., GALAKHMATOVA, B. S., GULAMOV, I. R., KALACHEVA, Z. F., OMAR, M. R. and ROMANOVSKIY, Ye. A.

"Polarization of Protons as a Function of Energy during Elastic Scattering in ^{24}Mg"

Abstract: The authors used the double-scattering method to measure the extent to which polarization of protons during elastic scattering in ^{24}Mg depends on energy. Their experiments were carried out for energies ranging from 5.9 to 6.5 million electron volts for 60° and 120° angles of scattering. While measuring the dependence of polarization on energy during elastic scattering, they also valuated it for the case of inelastic scattering of protons in ^{24}Mg with an excitation level of 1.37 million electron volts, borrowing some needed data from another work. They found that polarization of protons varied considerably as a function of their energy for both angles in both types of scattering. The authors emphasize that their results are merely preliminary. They are planning further experiments to obtain spectroscopic information and data on the mechanism by which polarization is initiated.
1/1

Marine and Shipbuilding

USSR   UDC   629.12:532

GALAKHOV, I. N., KULAKOV, Yu. P.

"Wave Bending Moment and Roll of a Catamaran From the Results of Model
Tests on Regular Waves"

V sb. Materialy 25 Nauch.-tekhn. konferentsii. Leningr. in-t vodn. transp.
1971. T. 2 (Materials of the 25th Scientific and Technical Conference.
Leningrad Institute of Water Transportation, 1971. Vol 2), Leningrad, 1971,
pp 61-65 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B409)

Translation: The paper presents the results of tests of a catamaran
model in an experimental tank with variation of the horizontal and verti-
cal clearance, as well as the length, height and course angle of regular
waves. The longitudinal bending moment in both hulls was measured as well
as the pitching, heaving and rolling.
    It is noted that a wide variation in vertical clearance has practi-
cally no effect on the relative amplitudes of the investigated processes.
Horizontal clearance has a more noticeable effect: rolling (and heaving
as well, in the case of a broadside attitude to the waves) decreases, and
the bending moment increases. On an oblique course, the bending moments

1/2

USSR

GALAKHOV, I. N., KULAKOV, Yu. P., <u>Materialy 25 Nauch.-tekhn. konferentsii.</u>
<u>Leningr. in-t vodn. transp. 1971. T. 2, Leningrad, 1971,</u> pp 61-65

in the catamaran hull facing the oncoming waves may be 45 percent higher
than the corresponding moments in the other hull.
    The authors give comparative results of tests of an isolated hull of
a catamaran model, and point out the advantages of a double-hull model
with regard to pitching and rolling. G. A. Alchudzhan.

2/2

USSR   UDC 541-67

KNUNYANTS, I. L., GEORGIYEV, V. I., GALAKHOV, I. V., RAGULIN, L. I.,
and NEYMYSHEVA, A. A.

"p-d-Conjugation in Phosphoryl and Thiophosphoryl Groups of Organophosphorus
Compounds and Electron Screening of Phosphorus Atom Nucleus"

Abstract: In the NMR spectra the H' protons on the methyl group of methyl-
alkylthiophosphinic acid fluorides are less shielded than in case of methyl-
alkylphosphinic acid fluorides. Substituting sulfur for oxygen in dialkyl-
phosphinic acid chlorides and fluorides leads to different shifts in p^{31}. This
difference is probably due to weak interaction of the sulfur atom in the p-d
conjugation and change in the p-d conjugation in the phosphoryl group
depending on substituents. Going from phosphine oxides to respective thio-
oxides is accompanied by slight changes in electronic density at the phos-
phorus atom shifting consequently the signal of P^{31} nucleus. In thiophos-
phorusorganic compounds the electronic density on the phosphorus atom depends
on the inductive effect of the substituents. Therefore the magnitude of P^{31}
shifts will increase with increased electronegativity of the substituents
on the phosphorus atom. Decrease in the number of C-H bonds at the carbon
1/2

USSR

KNUNYANTS, I. L., et al., Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 862-865

atom located in the α-position in respect to the phosphorus results in a shift of the P^{31} signal towards a weaker filed, while the F^{19} signal shifts towards stronger fields. The shift in F^{19} signal is constant regardless of the length of the substituent hydrocarbon chain.

2/2

TITLE--COMPLEXING OF DIFLUOROAMINE WITH CARBONYL COMPOUNDS -U-

AUTHOR-(04)-FOKIN, A.V., KOSYREV, YU.M., GALAKHOV, I.V., RAGULIN, L.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 934-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBONYL COMPOUND, FLUORINATED ORGANIC COMPOUND, AMINE,
   COMPLEX COMPOUND, LOW TEMPERATURE EFFECT, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1467   STEP NO--UR/0062/70/000/004/0934/0936

CIRC ACCESSION NO--AP0135138
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0135138
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING WERE PREPD. FROM
 CARBONYL COMPDS. AND HNF SUB2 IN CH SUB2 CL SUB2 AT MINUS 40DEGREES TO
 MINUS 70DEGREES, AS ADDUCTS OF THE GENERAL TYPE R SUB2 C(OH)NF SUB2 (R
 SUB2 SHOWN): ME SUB2; ME, ET; ME, H; ET, H; PR, H; ALSO THE ADDUCT OF
 ET SUB2 O WITH HNF SUB2. ALL THESE WERE DETECTED IN THE SOLN. BY PROTON
 NMR SPECTRA, WHICH WERE DESCRIBED. ALTHOUGH THE FORMAL STRUCTURES OF
 THE ADDUCTS ARE UNCERTAIN, THE LIKELY PRECURSORS TO THE ABOVE LISTED
 DIFLUOROAMINO ALCS. ARE ADDUCTS OF GENERAL TYPE R SUB2 CO.HNF SUB2
 BONDED BY A FORM OF H BOND BETWEEN THE CARBONYL O AND THE N ATOM.
 INITIAL MIXING OF THE REACTANTS RESULTS IN A PROGRESSIVE SHIFT OF THE
 TRIPLET SIGNAL OF THE HNF SUB2 PROTON TOWARD WEAKER FIELDS; FOR MANY
 MIN. THE INTENSITY AND FORM OF THE SIGNAL HNG SUB2 REMAIN UNCHANGED, BUT
 ON LONGER EXPOSURE, AND ESP. AT ROOM TEMP., AN IRREVERSIBLE AND COMPLETE
 DISAPPEARANCE OF THE HNF SUB2 SIGNAL TAKES PLACE, ALONG WITH APPEARANCE
 OF A NEW SIGNAL FROM THE HYDROXYL PROTON IN THE DIFLUOROAMINO ALC.
 PRODUCT. WITH EQUIMOLAR PROPORTION OF REACTANTS, THE INITIAL SHIFT OF
 THE PROTON SIGNAL OF HNF SUB2 AMTS. TO AS MUCH AS 1-1.5 PPM.

1/2   019   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--MECHANISM OF THE REACTION OF DIFLUOROAMINE WITH CARBONYL COMPOUNDS
-U-

AUTHOR-(04)-FOKIN, A.V., KOSYREV, YU.M., GALAKHOV, I.V., RAGULIN, L.I

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(1), 111-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, FLUORINATED ORGANIC COMPOUND,
AMINE, NITROGEN FLUORIDE, CARBONYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1863   STEP NO--UR/0020/70/192/001/0111/0114

CIRC ACCESSION NO--AT0132125
                    UNCLASSIFIED

CIRC ACCESSION NO--AT0132125
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES FOR THE REACTION OF
   HNF SUB 2 WITH ME SUB 2 CO TO GIVE ME SUB 2 C(NF SUB2)OH WERE SHOWN. IT
   WAS CONCLUDED THAT DESPITE A SUPERFICIAL RESEMBLANCE TO CYANOHYDRIN
   FORMATION, THIS REACTION DIFFERS FROM IT. THE REACTION OF HNF SUB 2
   PROCEEDS BY AN ELECTROPHILIC MECHANISM, OWING TO THE ACTIVITY OF THE
   UNSHARED ELECTRON PAIR AT THE CARBONYL O ATOM. THIS IS CONFIRMED BY
   THE INERTNESS OF (CF SUB3) SUB 2CO IN THIS REACTION, AND ITS HIGH
   ACTIVITY IN CYANOHYDRIN FORMATION. A REACTION SCHEME WAS SHOWN.

UNCLASSIFIED

TITLE--TRIS, DIFLUOROAMINO, FLUOROMETHANE -U-

AUTHOR-(04)-FOKIN, A.V., GALAKHOV, V.S., RADCHENKO, V.P., DAVYDOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,758
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, METHANE, AMINE
DERIVATIVE, GUANIDINE, FLUORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1740   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132006
                         UNCLASSIFIED

CIRC ACCESSION NO--AA0132006
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. TRIS(DIFLUOROAMINO)FLUOROMETHANE
(I) WAS PREPD. BY TREATING GUANIDINE DERIVS. WITH FREE F, DILD. WITH AN
INERT GAS, DURING COOLING FROM PLUS 30 TO MINUS 60DEGREES. INORG. SALTS
OF GUANIDINE WERE USED TO INCREASE THE YIELD OF I.

UNCLASSIFIED

USSR   UDC: 621.397.61

SHAPIRO, Ya. A., GALAKHOVA, N. G., VOVSI, L. M., BERLIN, B. A., KHARCHIK-
YAN, R. S., VOROB'YEVA, F. Kh.

"Technical Facilities of Television Services of the Soviet-Wide Television
Center"

V sb. Televizion. tekhnika (Television Technology--collection of works),
Moscow, "Svyaz'", 1971, pp 127-163 (from RZh-Radiotekhnika, No 6, Jun 71,
Abstract No 6G190)

Translation: Basic data are given on studio and announcer TV cameras,
motion picture cameras with TV view finder, cameras for transmitting motion
picture films in TV and motion picture projection rooms, and epidiascopic
projectors for transmitting transparencies, photos, drawings, etc. The
individual elements of the instrument and program unit, central instrument
room and video recording unit are described. N. S.

1/1

USSR   UDC 591.512.2

GALAKTIONOV, G. Z., Atlantic Institute of Fishery and Oceanography

"Orientation of Fishes in the Gulf of Kursk"

Sverdlovsk, Ekologiya, No 3, 1973, pp 89-92

Abstract: Experiments with labeled breams and eels showed that the two species behave quite differently. The breams moved as soon as they were released and immediately headed for the deepest water, but exhibited no preference for a particular direction. The eels, on the other hand, remained stationary for a while after they were released and then began to swim slowly in a generally north-easterly-easterly direction. The level of eel activity varied during the day; it was lowest from 0900 to 1200 hours and highest between 0200 and 0300 hours. It was concluded that the eel requires some information about the habitat before it can orient itself correctly. The prevailing weather conditions, existence of a current, etc. are factors that apparently influence its choice of direction.

1/1

TITLE--CONFORMATION FEATURES OF PEPTIDE FRAGMENTS CONTAINING PROLINE
RESIDUES -U-
AUTHOR-(04)-GALAKTIONOV, S.G., SHERMAN, S.A., KIRNARSKIY, L.I.,
NIKIFOROVICH, G.V.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(3), 236-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE, FRACTIONATION, PROLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0883   STEP NO--UR/0250/70/014/003/0236/0239

CIRC ACCESSION NO--AT0129952
                         UNCLASSIFIED

CIRC ACCESSION NO--AT0129952
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING A MORE COMPACT MATH.
EXPRESSION THAN USUALLY EMPLOYED, THE CONFORMATIONAL FEATURES OF 2 TYPES
OF MOLS. CONTG. PROLINE RESIDUES WERE MAPPED USING EXISTING DATA FOR THE
MATRIX APP. OF EYRING.   FACILITY: INST. TEPLO-MASSOOBMENA,
MINSK, USSR.

UNCLASSIFIED

USSR

UDC 621.385.632

GALAKTIONOV, S. V., FILIMONOV, G. F.

"On Computation of the Maximum Length of Sections of a Traveling-Wave Tube"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 1, pp 16-24 (from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A135)

Translation: A formula is developed for computation of the maximum length of sections of a TWT. Methods are considered for choosing the length of the drift spaces. The optimum value is estimated for the amplitude of the first harmonic of the current of the beam at the input of the last section of the tube. 10 ref. Summary.

1/1

USSR   UDC   621.372.542.29

SHIL'NIKOV, Yu. R., FILIPPOV, V. V., GALAKTIONOVA, G. M.

"A Ferrite Filter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsv, Tovarnyye Znaki,
No 5, Feb 72, Author's Certificate No 327541, Division H, filed 28 Sep 70,
published 26 Jan 72, p 155

Translation: This Author's Certificate introduces a ferrite filter for
low frequencies in the microwave band. The filter contains a transmission
line, an electromagnet and a single-crystal ferrite disc. As a distin-
guishing feature of the patent, losses are reduced and the range of
frequency adjustment is increased by locating the above-mentioned ferrite
disc inside a polycrystalline ferrite toroid whose height is equal to the
thickness of the disc.

1/1

172   044   UNCLASSIFIED   PROCESSING DATE—30OCT70
TITLE—ISOLATION OF A LONGITUDINAL OSCILLATION MODE IN SOLID STATE LASERS
—U—
AUTHOR-(05)-GALAKTICNOVA, N.M., GARKAVI, G.A., YEGOROVA, V.F., MAK, A.A.,
FROMZEL, V.A.
COUNTRY OF INFO—USSR

SOURCE—OPTIKA I SPEKTROSKOPIIA, VOL. 28, APR. 1970, P. 751-758

DATE PUBLISHED----APR70

SUBJECT AREAS—PHYSICS

TOPIC TAGS—SOLID STATE LASER, RESONATOR, SINGLE MODE LASER, LUMINESCENCE
SPECTRUM, LINE BROADENING, LASER PUMPING, NEODYMIUM GLASS

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/1225   STEP NO—UR/0051/70/028/000/0751/0758

CIRC ACCESSICN NO—AP0124879
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0124879
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYTICAL DETERMINATION OF THE
  CONDITIONS UNDER WITH A SOLID STATE LASER WITH A COMPLEX RESONATOR WILL
  OPERATE IN A SINGLE AXIAL MODE (CONDITIONS UNDER WHICH NO OTHER AXIAL
  MODES CAN BE EXCITED BECAUSE OF THEIR LARGE LOSSES). THE ANALYSIS IS
  PERFORMED FOR ACTIVE MEDIA VARYING IN THE NATURE OF LUMINESCENT LINE
  BROADENING, AND ABOVE THRESHOLD PUMPING POWERS. THE INFLUENCE OF THE
  NATURE OF LUMINESCENT LINE BROADENING ON THE SELECTIVE CHARACTERISTICS
  OF A RESONATOR CONTAINING A FABRY PEROT ETALON IS EXAMINED, SHOWING THAT
  INHOMOGENEOUS BROADENING MAKES IT DIFFICULT TO OBTAIN A SINGLE AXIAL
  MODE. THE THEORETICAL RESULTS ARE VERIFIED BY EXPERIMENTS PERFORMED
  WITH A PULSED NEODYMIUM GLASS LASER AT ABOVE THRESHOLD PUMPING POWERS.

UNCLASSIFIED

USSR

YEFIMOV, Yu., BARANOV, G., GALALU, V., and ROMENSKIY, Ye.

"Digital Functional Converter With Nonuniform Separation of the Argument"

Abstract: A possible method for shortening the computation time in electronic computers, the use of a special functional converter operating in conjunction with the computer, is discussed. It is noted that analog functional converters are useless because of poor accuracy and the complexity of devices that must be connected with the computer. The digital functional converter, however, is convenient for obtaining functional dependence of the $y = f(x)$ type with a finite number of plotting points, with intermediate values found through interpolation methods. Two graphs showing approximations of curves with uniform separation and with non-uniform separation are shown for the sake of contrasting the two methods; the much closer approximation of nonuniform separation of interpolated points is strikingly evident. A functional diagram of the converter is given, together with an explanation of its operation. From prototypes of the various units in the converter
1/2

USSR

YEFIMOV, Yu., et al, Elektronno-Vychislitel'naya Tekhnika i Program-
mirovaniye, No. 4, 1971, pp 109-111

and their behavior, the authors draw the conclusion that when the
converter is made of the elements used in the "Ural-10", the time
for computing the functional dependence $y = f(x)$ is less than 10
μs, as compared with the time of 2-10 ms for the "Minsk-2" to
compute even the simplest functions.

2/2

USSR   UDC: 534.322.3+534.83

GALANENKO, V. B., KARNOVSKIY, M. I., and KRASNYY, L. G.

"Statistical Analysis of Random Acoustical Fields"

Moscow, V sb. Tezisy dokl. 3-y Vses. shkoly--seminara po stat. gidroakustike, 1971 (Theses of Reports, Third All-Union School--Seminar on Statistical Hydroacoustics, 1971--collection of works) 1972, pp 136-145 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh591)

Translation: In the investigation of stationary (uniform and non-uniform) acoustical fields in problems of measuring the probability characteristics of these fields, the time average is used as an estimate. In this case, the estimate is unbiased, whereas the statistical error can be arbitrarily reduced at the expense of an increase in the averaged interval. In the measurement of the probability characteristics of nonstationary fields, difficulties arise that are connected with the appearance of a biasing error which increases with an increase in the averaging interval. This error can be minimized, but under unfavorable conditions (a rapid transient mode, for example) even a minimized error may be too large. Hence, to reduce the error in measuring nonstationary fields, the

1/2

USSR

GALANENKO, V. B., et al., Tezisy dokl. 3-y Vses. shkoly--seminara po stat.
gidroakustike, 1971 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh591

averaging must be done over space coordinates rather than time. Estimates
based on averaging over space can compete successfully with estimates based on
averaging over time if the ratio of the dimension of the quasi-uniformity zone
to the space correlation interval exceeds the ratio of the quasi-stationary
interval to the time correlation interval. It is noted, however, that in general
the best results for the estimation can be obtained by averaging over both
space and time. It is shown that such an estimate is practically unbiased, in
the choice of a number of conditions; the dispersion of this estimate is
determined; the competence of such an estimate under the condition of adherence
to the ergodicity of the random field is investigated. As examples, errors of
the estimates for the following cases are investigated: measurements of the
correlation functions of a random sonic field; measurements of the spectral
density of random sound field dispersion; and measurements of the probability
density of the random sound field. V. K.

2/2

USSR

UDC: 534.2

GALANENKO, V. B.

"Lensless Method for Forming the Real Acoustical Image of a Distant Object"

Vestn. Kiyev. politekhn. in-ta. Ser. radiotekhn. i elektroakust. (Herald of the Kiev Polytechnical Institute, Radio Engineering and Electroacoustics Series) No 9, 1972, pp 95-97 (from RZh-- Fizika, No 9, 1972, Abstract No 9Zh488)

Translation: The author proposes the functional system of a device for forming the real acoustical image of an object. The real images of a distant source are examined. It is shown that under certain conditions, the process of real image formation is analogous to two-dimensional filtration. Relationships are obtained for computing the dimensions of the acoustical system and the number of its component elements. Author's abstract

1/1

USSR

BESKOROVAYNYY, B. M., GALANENKO, V. B., KARNOVSKIY, M. I., Kiev Polytech-
nical Institute

UDC: 534.87

"Space-Time Correlation and Directivity of Ocean Reverberation in the Case
of Spaced Emitter and Receiver"

Abstract: The directional and correlation properties of volumetric rever-
beration are investigated for the case of spatially separated emitter and
receiver. Expressions are derived for the space-time correlation function
of the reverberation field in a region of space located at an arbitrary
distance from the emitter. It is shown that the directivity of the field
and its spatial correlation function vary with time.

1/1

- 114 -

USSR

UDC 521.039.521

GALANIN, A. D.

"Heterogeneous Reactor Theory"

Moscow, Atomizdat, 1971, p 2

Translation of Annotation: The book is devoted to the theory of the hetero-
geneous nuclear reactor using thermal neutrons, in which each heating block is
explicitly considered as a neutron source and sink. The basic idea of the
theory was formulated, for the case of small blocks, by Soviet theoretical
physicists as early as 1945-1947. In this treatment, the theory is extended
to cover large blocks. The principal application of the theory is the com-
putation of diffusion lengths and the delay of the neutrons in directions
parallel and perpendicular to the reactor channels. The polarization co-
efficients of the blocks determining the migration lengths as functions of
the blocks' dimensions are computed.

The book was written for specialists in the theory and methods of nuclear
reactor design, as well as for students of these disciplines.

Bibliography of 41 titles, 23 illustrations, 20 tables.
1/8

- 51 -

USSR

GALANIN, A. D., Atomizdat, 1971, p 2

Table of Contents

Foreword . . . .

Chapter 1. General Theory of the Heterogeneous Reactor
with Small Blocks . . . .

1.1. General equation . . . .

1.2. The Green function G_S in the diffusion
approximation. . . . .

1.3. The Green function G_P in the diffusion-
increment approximation. . . . .

1.4. Finite-height reactor. . . . .

1.5. Double-group approximation for the $H(\underline{r},\underline{r}')$
nucleus. . . . .

2/8

USSR

GALANIN, A. D., Atomizdat, 1971, p 2

Chapter 2. The External Block Effect

3/8

- 52 -

USSR

GALANIN, A. D., Atomizdat, 1971, p 2

2.3. Using the theory of analytic functions. . . . .

2.4. Neutron distribution over the cell. . . . . . .

2.5. The block effect as a function of the
reactor dimensions . . . .

2.6. Notes on nondiffusion corrections. . . . .

2.7. Distribution of epithermal neutrons over
the cell. . . . .

Chapter 3. General Equations of the Heterogeneous Reactor . . .

3.1. Solution of double-group equations . . . .

3.2. Using the boundary conditions. . . . .

3.3. Approximate determination of boundary
coefficients . . . .

4/8

USSR

GALANIN, A. D., Atomizdat, 1971, p 2

USSR

GALANIN, A. D., Atomizdat, 1971, p 2

6/8

USSR

GALANIN, A. D., Atomizdat, 1971, p 2

7/8

USSR

GALANIN, A. D., Atomizdat, 1971, p 2

8/8

USSR

UDC 621.385.623.5

BRODULENKO, I.I., GALANIN, A.K., GRIGOROV, N.K., ROZE, YE. A., VOYNENKO, V.L.,
SHMELEV, A. YE.

"Reflex Klystrons With Interchangeable Resonators"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronics Technology.
Scientific-Technical Collection. Microwave Electronics),1971, Issue 5, pp 74-82
(from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10A163)

Translation: The paper considers glass and metalceramic reflex klystrons with
interchangeable [s"yemnyy] resonators, which operate in the shortwave part of
the centimeter range of wave lengths with output powers up to 0.5 watt. Metal-
ceramic klystrons with interchangeable resonators assure high output electrical
parameters and in comparison with glass klystrons are more resistant to mechan-
ical and climatic effects and are also more promising during utilization of the
shortwave part of the centimeter range of wavelengths. Summary.

1/1

USSR

BREDIKhIN, V. I., GALANIN. M. D., and GENKIN, V. N.

".Two-Photon Absorption and Spectroscopy "

Abstract: This survey is devoted to theoretical and experimental studies of two-photon absorption in various media and its role in the spectroscopy of molecules, molecular crystals, and semiconductors. Chapter 2 contains a general analysis of an approximate description (considering two or several levels or zones of two-quantum transitions). It is shown that when considering two-quantum absorption it is more convenient to use the energy of interaction with the field E in the form (dE), where d is the dipole moment. Chapter 3 describes an experimental method used in measuring the values and spectra of two-photon absorption and an analysis of the characteristics of a two-photon absorption experiment in various media. Chapter 4 contains a discussion of the nature of two-photon molecular and molecular crystal spectra. It is shown that two-quantum transitions are of an electron-oscillatory nature. A detailed comparison is made between the theory given and experiments available in the literature. The last chapter contains a discussion of two-photon absorption in semiconductors and ionic crystals.

1/2

USSR

BREDIKhIN, V. I., et al., Uspekhi Fizicheskikh Nauk, Vol 110, No 1, May 73, pp 3-43

The theory is compared with experimental results. On the basis of experimental data, it is demonstrated that two-photon absorption in $A_{II}B_{VI}$, $A_{III}B_{V}$, and and $A_{IV}B_{IV}$ semiconductors can be described in basic outlines in a single way in the two-zone model. One table, 14 illustrations, 182 bibliographic sources.

2/2

1/3   042   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--TWO QUANTUM ANTI STOKES PROCESSES DURING THE EXCITATION OF DYES -U-

AUTHOR-(04)-VEDUTA, A.P., GALANIN, M.D., KIRSANOV, B.P., CHIZHIKOVA, Z.A.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(3), 157-62

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--RUBY LASER, NEODYMIUM LASER, LIGHT SCATTERING, EXCITED STATE,
    DYE, SPECTRUM, EXCITATION ENERGY, LUMINESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2090   STEP NO--UR/0386/70/011/003/0157/0162

CIRC ACCESSION NO--AP0125677
                        UNCLASSIFIED

CIRC ACCESSICN NC--AP0125677
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLN. OF DYE WAS EXPOSED FOR 20
NSEC TO IMPULSES FROM RUBY AND ND LASERS WITH A PEAK POWER OF 50 MW, AND
THE SPECTRA OF THE LATERALLY SCATTERED LIGHT MEASURED. CHARACTERISTIC
ELECTRONIC VIBRATION BANDS ARE SHOWN: (1) ABSORPTION OF QUANTUM OF
RADIATICN, (2) RELAXATION TO LOWER STATE, (3) ONE QUANTUM LUMINESCENCE,
(4) ABSORPTICN WITH TRANSFER TO VIRTUAL LEVEL, (5) RELAXATION, (6)
NONRADIATIVE RELAXATION TO 1ST EXCITED STATE, (7) LUMINESCENCE FROM 1ST
EXCITED STATE, AND (8) ANTI STOKES COMBINATION DEGRADATION. ALL SPECTRA
SHOWED THAT THE MAX. CORRESPONDING TO PROCESS (8) LIE ON THE SHORT
WAVELENGTH SLOPE OF THE MAX. CORRESPONDING TO PROCESS (7). THE POSITION
OF THE MAX. COINCIDE WITH THE SUM OF THE ENERGIES OF THE PROCESSES (3)
AND (4). EXCITATION OF POLYMETHINE DYES WITH 2ND HARMONIC RADIATION OF
WAVELENGTH 530 NM DOES NOT PRODUCE A MAX. FOR PROCESS (8), BUT A MAX. IS
SEEN FOR PROCESS (7). PROCESS (8) IS APPROX. LINEAR WITH EXCITATION
ENERGY EXCEPT AT LOW ENERGIES WHEN 2,PHOTON EXCITATION BECOMES
IMPORTANT. PROCESS (7) IS LINEAR WITH EXCITATION ENERGY. THE
POLARIZATICN OF VARIOUS MAX. WAS MEASURED BY OBSERVATION OF CROSS
SECTION IN RELATICN TO EXCITING BEAM DIRECTION.   EXPTL. VALUES OF
POLARIZATION RATIO (I PERPENDICULAR TO- I PARALLEL TO) WERE (A) 0.74
PLUS OR MINUS 0.12 WITH UNPOLARIZED RADIATION AT MAX. 570 NM, AND (B)
0.63 PLUS OR MINUS 0.05 AND 0.50 PLUS OR MINUS 0.06 WITH POLARIZED
RADIATICN AT MAX. 380 AND 450 NM, RESP. THE CROSS SECTION OF PROCESS
(8) WAS 10 PRIME NEGATIVE28 10 PRIME NEGATIVE27 CM PRIME2.

UNCLASSIFIED

CIRC ACCESSION NO--AP0125677
ABSTRACT/EXTRACT--THEORY GIVAS A VALUE OF 10 PRIME NEGATIVE29-10 PRIME
NEGATIVE26 CM PRIME2, AND EXPTS. WITH 2,PHOTON ABSORPTION GIVE A VALUE
OF 10 PRIME NEGATIVE27 CM PRIME2. ALL MAX. FOR PROCESS (8) ARE BROADER
THAN EXPECTED FOR ONE QUANTUM ABSORPTION AND IN SOME CASES ARE SHIFTED
TO THE SHORTWAVE REGION.   THIS MAY BE BECAUSE PROCESS (2) IS INCOMPLETE
OWING TO THE CHARACTERISTIC LIFETIMES OF THE PROCESSES (10 PRIME
NEGATIVE13-10 PRIME NEGATIVE11 SEC).   FACILITY: FIZ. INST. IM.
LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2   025   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--TWO QUANTUM ANTI STOKES PROCESSES IN THE EXCITATION OF DYES -U-

AUTHOR-(04)-VEDUTA, A.P., GALANIN, M.D., KIRSANOV, B.P., CHIZHIKOVA, Z.A.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 3, P. 157-62, FEB. 1970

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--DYE, RAMAN SCATTERING, LUMINESCENCE, EXCITED STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1854   STEP NO--US/0000/70/011/003/0157/0162

CIRC ACCESSION NO--AP0135419
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0135419
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPORTS AN EXPERIMENTAL
OBSERVATION OF ANTI STOKES RAMAN SCATTERING BY THE ELECTRONIC STATE OF
MOLECULES AND LUMINESCENCE FROM THE SECOND EXCITED ELECTRONIC STATES IN
ORGANIC DYES.   FACILITY: USSR ACAD. SCIS.

UNCLASSIFIED

Organ and Tissue Transplantation

USSR   UDC 616.12-089.843-089.168-07:616.12-008.9-097.5

RAPOPORT, Ya. L., FAL'KOVSKIY, G. E., and GALANKINA, I. Ye., Institute of
Cardiovascular Surgery imeni A. N. Bakulev, Academy of Medical Sciences USSR

"Immunomorphology and Pathology of Allotransplanted Heart (Without Immuno-
depressive Effect)"

Abstract: Morphological and histochemical changes in the lymphatic system and
allotransplanted heart of dogs 1 to 12 days after the operation without the
use of immunodepressive agents were studied. Morphological changes appeared
in the lymph nodes and spleen before signs of rejection in the transplant. The
changes were characteristic of active antigenic irritation - hyperplasia of the
follicles and plasma cell and macrophage reactions. Rejection of the trans-
plant was indicated by alterations in the blood vessels and impairment of
permeability, infiltration of interstitial spaces with lymphoid and plasma
cells (typical of the delayed type of hypersensitivity), disturbance of
muscle fiber metabolism characteristic of myocardial hypoxia (disappearance
of glycogen, decreased content of succinate dehydrogenase, denaturation of
contractile proteins) and ultimate destruction of the fibers. All these
processes associated with rejection of allotransplanted heart constitute a
syndrome that might be called "transplantation myocarditis."
1/1

Organ and Tissue Transplantation

FAL'KOVSKIY, G. E., KAZAKOV, E. N., YARLYKOVA, Ye. I., ASTRAKHANTSEVA, G. I.,
ALEKSEYEVA, L. A., KOBKOVA, I. D., SOKOLOV, M. V., GALANKINA, I. Ye., IDL'SHUKHINA,
L. A., and GUDKOVA, R. G., Institute of Cardiovascular Surgery imeni A. N. Bakulev,
Academy of Medical Sciences USSR, Moscow

"The fate of an Heterotopic Heart Allotransplant"

Abstract: Donor hearts transplanted to the iliac arteries of recipient dogs
survived up to 16 days. The causes of cessation of transplant function during
the first 48 hours were surgical complications (death of the recipient from the
anesthetic, hemorrhages from the sutures, thrombosis). In the absence of such
complications, the transplants continued to function 3 to 12 days average, (4.75
days) when immunodepressants were not used, and 3 to 8 days (average, 6.16 days)
when they were. Cardiac arrest was preceded by arrhythmias, a decrease in vol-
tage of the ventricular complex, and increase in lymphocytes in the peripheral
blood following leukopenia. Immunomorphological changes in the recipient's lym-
phatic system preceded the morphological signs of rejection in the transplant
(pronounced lymphoid-histiocyte infiltration, changes in the arteris, and meta-
bolic disturbances in the myocardium).
1/1

UNCLASSIFIED   PROCESSING DATE--20NOV70

1/2   020

TITLE--TITANIUM, III, CHLORIDE AS A REDUCING AGENT DURING THE PHOTOMETRIC DETERMINATION OF PHOSPHORUS AS MOLYBDOPHOSPHATE -U-

AUTHOR-(03)-SUDAKOV, F.P., GALANKINA, N.F., KHAMRAKULOVA, M.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 548-52

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM CHLORIDE, PHOTOMETRIC ANALYSIS, PHOSPHATE, MOLYBDENUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0463   STEP NO--UR/0075/70/025/003/0548/0552

CIRC ACCESSION NO--AP0126215
                                   UNCLASSIFIED

CIRC ACCESSICN NO--AP0126215
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 12,MOLYBDOPHOSPHATE CAN BE REDUCED
IN AN ACID MEDIUM BY TICL SUB3. THE EFFECT OF VARIOUS FACTORS (CONCN.
OF REACTING SUBSTANCES, ACIDITY, TEMP., TIME) WAS STUDIED.   OPTIMUM
CONDITICNS FCR THE REDN. ARE: BOILING FOR 10 MIN, ACIDITY OF 1.5-3.0N
HCL OR 1.5-2.0N H SUB2 SO SUB4, 9.6 TIMES 10 PRIME NEGATIVE2 M MOLYBDATE
CONCN., AND GREATER THAN OR EQUAL TO 7 TIMES 10 PRIME NEGATIVE3 M TICL
SUB3 CONCN.   A DIAGRAM OF MOLYBDOPHOSPHATE STABILITY WAS CONSTRUCTED,
WHICH SHCWS THE JOINT EFFECT OF THESE FACTORS AND THE OPTIMUM ACIDITY OF
THE SCLN. AT A GIVEN MOLYBDATE CONCN. AND VICE VERSA. TO DET. SMALL
AMTS. OF P, TO A SOLN. CONTG. SIMILAR TO 0.025 MG P-ML, ADD 4.33 ML HCL,
8 ML 0.4M NA MOLYBDATE AND 8 ML 0.2087M TICL SUB3, BOIL FOR 10 MIN ON A
WATER BATH, COOL, DIL. TC 25 ML WITH H SUB2 O, AND DET. P
PHOTOMETRICALLY AT 810 NM. THE MOLAR ABSORPTIVITY AT 810 NM IS 2.9
TIMES 10 PRIME4.   FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

UDC: 621.117

USSR

GALANSKIY, R. V.

"A Pulse Number-to-Position Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 279200, Class 42, filed 29 Apr 69, pp 139-140

Abstract: This Author's Certificate introduces a pulse number-to-position converter which contains a counting flip-flop and a reference signal source whose output is connected to the input of the reference channel counter and to the first input of the working channel counter. The second input of the working channel counter is connected to the output of the control signal source. As a distinguishing feature of the patent, conversion reliability is improved and breakdowns are detected by including an inverter, a reversible counter, a shaper, two coincidence circuits and an OR gate in the converter. The input of the reversible counter is connected to the output of the control signal source, while its output is connected to the flip-flop input, and to the first inputs of the coincidence circuits through the shaper. The second inputs of the coincidence circuits are connected to the output of the working channel counter, while the third inputs of the first coincidence circuit are connected directly to the output of the reference channel counter, and the third inputs of the second coincidence circuit are connected to the output of the same counter through the inverter. The fourth inputs of the coincidence circuits are connected to the two arms of the flip-flop, and the coincidence circuits' outputs are connected to the inputs of the OR gate.

1/1

- 56 -

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"Wide-Band Transistorized Power Amplifiers in the Meter Range"

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Abstract: Two versions of transistorized amplifiers with wide-band matching circuits executed on the basis of filter circuits assembled with common base and emitter are presented. They have Chebyshev characteristics. A schematic is presented of an amplifier operating in the frequency range of 95-155 megahertz and assembled from three transistors with parameters analogous to the 2N3375 transistor with a common base. The output circuit of the amplifier matching the output impedance of the third cascade with a 50 ohm load was made three-element and insures a load resistance for the output transistor of 30 ohms. The overall dimensions of this amplifier are $140 \times 30 \times 20$ mm^3. The mean output power in the operating range is 3.2 watts, and the power amplification coefficient $K_p \sim 23$ decibels.

The second version of the amplifier for the 220-290 megahertz range was assembled from two transistors analogous to the 2N3632 with a common emitter. The input and intercascade circuits are two-element to match the input impedance of the transistor with the generator and the output impedance of the transistor. The intercascade matching circuit insures a load resistance for

1/2